

REMARKS**I. Summary**

Claims 1-25, 27, 28, 30, and 31 are pending. In a Final Office Action mailed April 4, 2005, each of claims 1-25, 27, 28, 30, and 31 were rejected. Independent claims 1 and 13 have been amended without prejudice and without acquiescence. Support for these claim amendments can be found throughout the specification, more specifically, page 2, lines 10-18. The issues outstanding in this application are as follows:

- Claims 1-7, 12-14, 16-24, 27, and 30-31 are rejected under 35 U.S.C. § 102(b) as anticipated by Horres, Jr (U.S. Patent No. 5,368,571, hereinafter “Horres”).
- Claims 1-10 are rejected in the alternative under 35 U.S.C. § 102(b) as being anticipated by Onishi et al. (U.S. Patent No. 5,547,472, hereinafter “Onishi”).
- Claims 8-10, 15, 25, and 28 are rejected under 35 U.S.C. § 103(a) as unpatentable over Horres in view of Onishi.
- Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Horres in view of Swatek (U.S. Patent No. 6,015,266). Alternatively, claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Onishi in view of Swatek.
- Claims 1-10, 12-25 and 27-28 are rejected in the alternative as being unpatentable over Onishi.

Applicant respectfully traverses the outstanding rejections. Applicant respectfully requests reconsideration and withdrawal in light of the remarks contained herein.

II. Claim Rejections under 35 U.S.C. § 102(b)

A. Horres

Claims 1-7, 12-14, 16-24, 27, and 30-31 are rejected under 35 U.S.C. § 102(b) as anticipated by Horres. To anticipate a claim under 35 U.S.C. § 102, a reference must teach every element of the claim. *See* M.P.E.P. § 2131.

Applicants assert that Horres does not teach channels and chambers that are part of a micro channel plate. However, in order to advance the prosecution of the present invention, Applicants have amended independent claims 1 and 13 to further define the micro channel structure without prejudice and without acquiescence. Nowhere in Horres that Applicants can identify is there any mention of a micro channel structure such that the distance between two opposite walls in a channel is about $\leq 1000\mu\text{m}$ to about $\leq 1\mu\text{m}$ and the depth of a chamber is about $\leq 1000\mu\text{m}$ to about $\leq 1\mu\text{m}$. If the Examiner continues to maintain that Horres is the basis for this rejection, the Examiner is requested to make of record the passage relied upon, or state for the record that no such teaching can be found in Horres. *See, In re Gartside*, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000).

Claims 2-7, 12, 14, 16-24, 27, and 30-31 depend directly or indirectly from each of claims 1 and 13. As such, they comprise all limitations of the base claim from which they depend. As shown above, Horres does not teach all limitations of claims 1 and 13. Accordingly, Horres does not teach all limitations of claims 2-7, 12, 14, 16-24, 27, and 30-31. Thus, Horres does not anticipate claims 2-7, 12, 14, 16-24, 27, and 30-31.

Regarding claim 27, the Examiner states that “[c]laim 27 is a product by process [and] therefore is not given patentable weight.” *See* Final Office Action, page 2, paragraph 2. Applicant respectfully requests that the Examiner provide support for this statement. M.P.E.P. § 2113 (citing *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972)) states that “when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable.”

Here, the Examiner appears to be rejecting claim 27 under 35 U.S.C. § 102(b) as anticipated by Horres. Claim 27 recites “wherein said intelligent polymer material is a polymerization product of N-isopropylacrylamide and N,N-methylene bisacrylamide. As shown above, Horres teaches a plug which is formed of “electroerodible, or dissolvable type material....” See Horres, col. 9, lines 44-46. Horres does not appear to teach a polymerization product of N-isopropylacrylamide and N,N-methylene bisacrylamide. Thus, Horres does not teach the above-recited limitation and does not anticipate claim 27.

In view of the above, Applicants respectfully request that the rejection be withdrawn.

B. Onishi

Claims 1-10 and 12 are rejected in the alternative under 35 U.S.C. § 102(b) as being anticipated by Onishi. To anticipate a claim under 35 U.S.C. § 102, a reference must teach every element of the claim. See M.P.E.P. § 2131.

The Onishi patent teaches a stimulus responsive polymer attached to pores of a catheter or balloon catheter. Onishi does not teach a micro channel structure comprising a chamber in the microformat. The pores of the catheter of Onishi do not define a micro channel structure comprising channels and chambers on a plate. Thus, it seems highly unlikely that a plate format would be suitable for a catheter as defined in Onishi. However, in order to advance the prosecution of the present invention, Applicants have amended independent claim 1 to further define the micro channel structure without prejudice and without acquiescence. Nowhere in Onishi that Applicants can identify is there any mention of a micro channel structure such that the distance between two opposite walls in a channel is about $\leq 1000\mu\text{m}$ to about $\leq 1\mu\text{m}$ and the depth of a chamber is about $\leq 1000\mu\text{m}$ to about $\leq 1\mu\text{m}$. If the Examiner continues to maintain that Onishi is the basis for this rejection, the Examiner is requested to make of record the passage relied upon, or state for the record that no such teaching can be found in Onishi. See, *In re Gartside*, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000).

Claims 2-10 and 12 depend directly or indirectly from claim 1. As such, they comprise all limitations of the base claim from which they depend. As shown above, Onishi

does not teach all limitations of claim 1. Accordingly, Onishi does not teach all limitations of claims 2-10 and 12. Thus, Onishi does not anticipate claims 2-10 and 12.

On page 3 of the Final Rejection, the Examiner indicates that claim 27 is also rejected under Onishi. Applicants are confused by this statement. Firstly, it appears that the Examiner may have cut and pasted this section from the previous rejection under Horres. Secondly, claim 27 depends from claim 13, which was not rejected under this section in view of Onishi. Thus, if claim 13 is not anticipated, then dependent claim 27 is also not anticipated since it incorporates all limitations of claim 13. Applicants request that the Examiner clarify this statement.

In view of the above, Applicants respectfully request that the rejection be withdrawn.

III. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-25 and 27-28 have been rejected under 35 U.S.C. § 103(a) as being obvious over combinations of Horres, Onishi, and/or Swatek. To establish a *prima facie* case of obviousness, three basic criteria must be met. *See* M.P.E.P. § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

A. Horres in view of Onishi

Improper Motivation

Claims 8-10, 15, 25, and 28 are rejected under 35 U.S.C. § 103(a) as unpatentable over Horres in view of Onishi. Applicants respectfully assert that the Examiner has not provided proper motivation to combine the cited references, and thus has not established a *prima facie* case of obviousness as required by M.P.E.P. § 2143. The Examiner states that it would have been obvious to “make the polymer of Horres heat responsive as disclosed by Onishi in order to provide a method of actuation, which would provide a method of actuation that is an easy method of providing power.” *See* Final Office Action, p. 4. The Examiner

further states that it would have been obvious “to make the plug [of Horres] out of polymethacrylates as disclosed by Onishi in the valve of Horres in order to proved [sic] a plug that is easily produced.” *See id.* Lastly, the Examiner further states that it would have been obvious to make “the a [sic] structure made of polycarbonate as disclosed by Onishi in the valve of Horres in order to proved [sic] a structure that is easily produced.” *See id.*

Applicant respectfully asserts that “provide a method of actuation that is an easy method of providing power,” “provide a method of actuation that is a cheap source of power,” and/or “proved [sic] a plug that is easily produced” are not sufficient motivations to combine the two references. It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. *See* M.P.E.P. § 2143.01. The language of the recited motivation is circular in nature, stating that it is obvious to make the modification because it is obvious to achieve the result. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990), as cited in M.P.E.P. § 2143.01. Furthermore, none of the methods of actuation taught or suggested by the references provide power or are a source of power. Thus, the motivation provided by the Examiner is improper, as the motivation must establish the desirability for making the modification.

Yet further, Applicants remind the Examiner that if an independent claim is non-obvious under 35 U.S.C. 103(a), then any claim depending therefrom is by definition non-obvious. *In re Fine*, 5 USPQ 2d 2596 (Fed. Cir. 1988). Dependent claims 8-10, 15, 25 and 28 depend from independent claims 1 and 13 and, thus contains all the limitations of the independent claims and are non-obvious. Thus, Applicants respectfully request that the Examiner withdraw the rejection of claims 8-10, 15, 25, and 28 under 35 U.S.C. § 103(a) as unpatentable over Horres in view of Onishi and pass these claims to allowance.

B. Horres in view of Swatek

Improper Motivation

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Horres in view of Swatek (U.S. Patent No. 6,015,266). Applicant respectfully asserts that the Examiner has not provided proper motivation to combine the cited references, and thus has not established a *prima facie* case of obviousness as required by M.P.E.P. § 2143. The Examiner states that it would have been obvious to “make the polymer of Horres magnetically responsive as disclosed by Swatek in order to provide a method of actuation, which would provide significant expansion in volume....” See Final Office Action, p. 4.

M.P.E.P. § 2141.02 directs that “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” Additionally, “[i]t is improper to combine references where the references teach away from their combination.” See M.P.E.P. § 2145. Horres teaches away from expansion in volume, and in fact indicates that reduction in volume is a goal by teaching “electro-erodible or dissolvable plug members.” See Horres at col. 12, lines 33-37. Thus, the motivation provided by the Examiner is improper, as Horres teaches away from the claimed motivation.

Yet further, Applicants remind the Examiner that if an independent claim is non-obvious under 35 U.S.C. 103(a), then any claim depending therefrom is by definition non-obvious. In re Fine, 5 USPQ 2d 2596 (Fed. Cir. 1988). Dependent claim 11 depends from independent claim 1 and, thus contains all the limitations of the independent claim and is non-obvious. Applicant respectfully requests that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. § 103(a) as unpatentable over Horres in view of Swatek and pass this claim to allowance.

C. Onishi

Not All Limitations

Claims 1-10, 12-25 and 27-28 are rejected in the alternative as being unpatentable over Onishi. Claims 1 and 13 recite “a micro channel structure comprising a channel and a chamber in the microformat.” As shown above under heading “Claim Rejections under 35 U.S.C. § 102(b), Onishi does not teach a microchannel structure comprising a chamber in the microformat. Thus, Onishi does not teach or suggest all limitations recited by claims 1 and 13.

Claims 2-10, 12, 14-25, and 27-28 depend directly or indirectly from claims 1 and 13. As such, they comprise all limitations of the base claim from which they depend. As shown above, Onishi does not teach or suggest all limitations of claims 1 and 13. Accordingly, Onishi does not teach or suggest all limitations of claims 2-10, 12, 14-25, and 27-28. Thus, claims 2-10, 12, 14-25, and 27-28 are not obvious over Onishi. Applicant respectfully requests that the Examiner withdraw the rejection of claims 2-10, 12, 14-25, and 27-28 under 35 U.S.C. § 103(a) as unpatentable over Onishi and pass these claims to allowance.

D. Onishi in view of Swatek

Not All Limitations

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Onishi in view of Swatek. As shown above, Onishi does not teach or suggest all limitations of claim 1. As claim 11 depends directly from claim 1, it comprises all limitations of the base claim. Accordingly, Onishi does not teach or suggest all limitations of claim 11. Swatek is not relied upon as curing the deficiencies of Onishi with respect to claim 11. Thus, Onishi in view of Swatek does not teach or suggest all limitations of claim 11, and claim 11 is not obvious over the cited references. Applicant respectfully requests that the Examiner withdraw the rejection of claim 11 under 35 U.S.C. § 103(a) as unpatentable over Onishi in view of Swatek and pass this claim to allowance.

IV. Applicant's Remarks on the Examiner's Response to Arguments

Applicant respectfully traverses the statements made by the Examiner in the Final Office Action under heading "Response to Arguments." *See* Final Office Action, p. 5-6. The Examiner states that Applicant argues that "Onishi is not a micro channel structure." Applicant previously argued on page 8 of the Response to Non-Final Office Action filed January 7, 2005 that "[n]either Onishi nor Swatek, alone or in combination, suggest a micro channel structure defining a liquid transportation system that is present on the plate." Respectfully, Applicant again asserts this argument in addition to the arguments set forth above.

The Examiner also states that "the recitation of 'a liquid transportation system that is present on a plate' has not been given patentable weight because the recitation occurs in the preamble in claims 1-12. A preamble is generally not accorded any patentable weight where the body of the claim does not depend on the preamble for completeness. *See In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976). This is not the situation in claim 1. The body of claim 1 clearly refers to the preamble of the claim. For example, "in said microchannel structure" has antecedent basis in the preamble. Thus, the body of the claim depends on the preamble for completeness. However, in order to advance the prosecution of the present invention, Applicants have amended claim 1 without prejudice and without acquiescence to move this limitation into the body of the claim.

IV. Conclusion

In view of the above, Applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2375, under Order No. HO-P02352US0 from which the undersigned is authorized to draw.

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Respectfully submitted,

By 

Melissa W. Acosta

Registration No.: 45,872

FULBRIGHT & JAWORSKI L.L.P.

Fulbright Tower

1301 McKinney, Suite 5100

Houston, Texas 77010-3095

(713) 651-5151

(713) 651-5246 (Fax)

Agent for Applicant